ELL Reader

Science

Science

Meet the Moon!

A Book for Moon Fans



by Robert Decker



Genre	Build Background	Access Content	Extend Language
Expository Nonfiction	• The Moon • Earth's Cycles • Day and Night	• Questions • Captions and Labels • Definitions • Diagrams	• Word Origins • Comparative Adjectives

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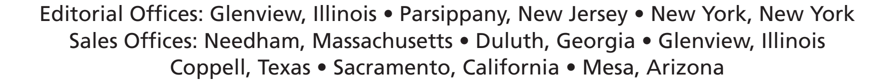
Meet the Moon!

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The Moon's surface is covered with holes, called craters, and dark, smooth areas called maria. There are also mountains and valleys on the Moon.

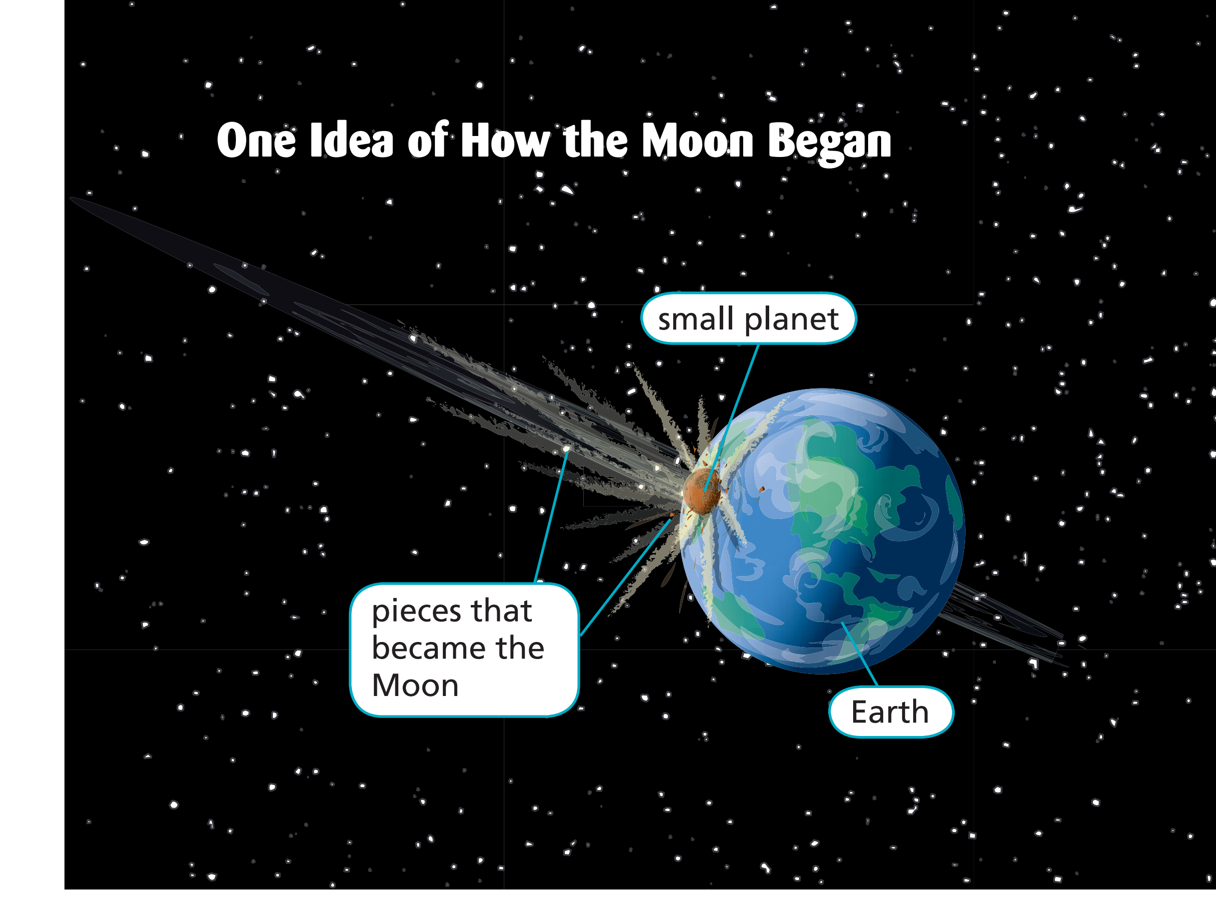
You Can Be a Moon Expert!

Have you ever wanted to know more about the Moon? Well, here's your chance! We're going to answer some of the most common questions people have about the Moon. Read the answers, and you may become a Moon expert!

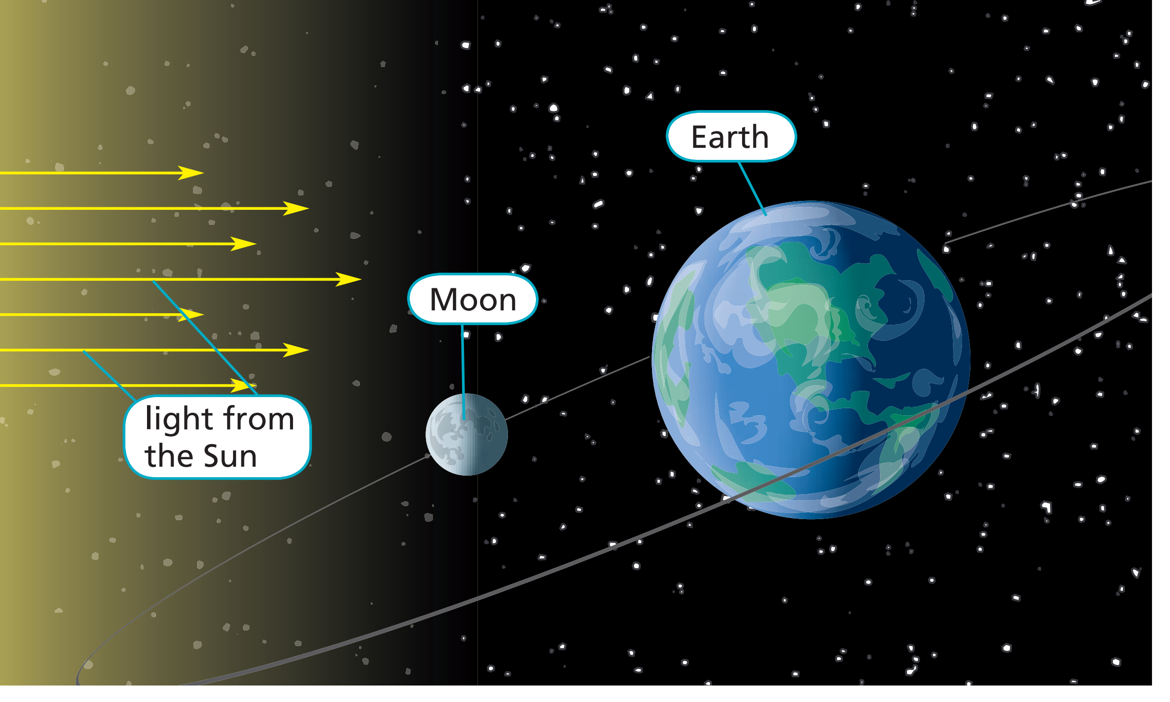
What is the Moon? The Moon is a satellite of the Earth. This means that it orbits the Earth. You may have heard the word *satellite* before, when people talk about communications or weather satellites. These are human-made satellites, launched into space by rockets. The Moon is a natural satellite.

orbits: revolves or travels around an object

launched: sent off



How and when did the Moon form? Nobody knows exactly how the Moon formed, but scientists have an idea. Some scientists think that the Moon was once a part of the Earth. This was between four and five billion years ago. Scientists think that a small planet may have crashed into the Earth and knocked material from its outer surface into space. As time passed, this material came together to form the Moon. Some scientists think this because Moon rocks brought back to the Earth by astronauts contain material that is similar to that of Earth's outer layers.



It takes the Earth twenty-four hours to rotate once. That is why each half of the planet gets about twelve hours of day and twelve hours of night.

How big is the Moon, and how far away is it from the Earth? The Moon is a little over a quarter of the Earth's size. It is about 239,000 miles (about 384,000 kilometers) away from the Earth.

Why can't we see the Moon during the day like we see it at night? The Moon can be seen just about any time of the day or night, but people usually don't notice it during the day. As the Earth rotates, half of the Earth has day and the other half has night. At night, we notice the Moon because it is the brightest thing in the sky. But during the day we seldom notice the Moon because the Sun is so much brighter.

rotates: turns

Where does the Moon's light come from? The Moon reflects the light of the Sun, like a mirror.

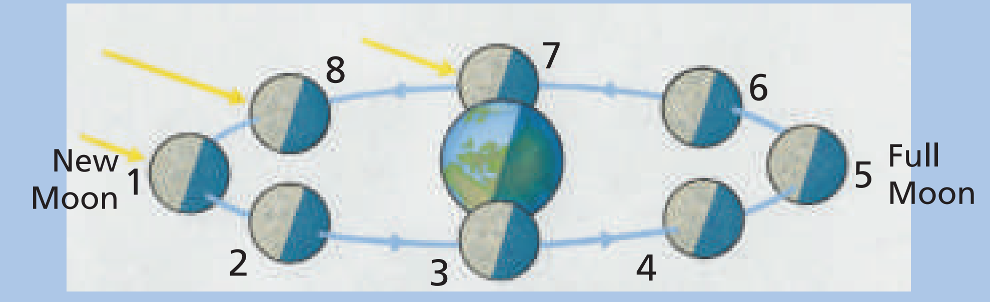
How quickly does the Moon move? You know that the Moon orbits the Earth. It takes about 29 days, or about a month, for the Moon to return to the same place in its orbit, as seen from Earth. The Moon also rotates. It takes the Moon about 29 days to do this, too. This means that a day on the Moon is about a month long!

What is the Moon like? Well, the Moon is as round as the Earth, but in other ways it's not like the Earth! It has no life at all. This is because it has no air, water, or other gases that living things need. In fact, it has no gases at all around it—no atmosphere. It has one-sixth the gravity that Earth has, so objects are much lighter on the Moon.

Is there more that you'd like to learn about the Moon? We're sure there is, and we hope that we have started you on your journey. Make the library your first stop. There are many, many books about the Moon that you can read. And after that—well, who knows? Some day in the future, you might just visit the Moon yourself!

gravity: the force of an object to pull other objects to it

Moon's Position in Orbit



Phases Seen from Earth



This is how the Moon looks to us at different points in its orbit around the Earth.

Looking at the Moon

The Moon's Phases

What did the Moon look like the last time you looked up at it? Was it full, or half full, or a little slice of light? Could you see it at all?

The different ways that the Moon looks are called its phases. The Moon isn't really changing shape when it is going through its phases. It is reflecting different amounts of sunlight to Earth as it orbits Earth. Since it takes the Moon about 29 days to complete a cycle from full Moon to full Moon, we see it go through all its phases every month.


Lunar eclipse


Solar eclipse

Eclipses

Have you ever seen a lunar or solar eclipse? During a lunar eclipse, the full Moon seems to turn a brilliant red or orange. A lunar eclipse can last a couple of hours. During a solar eclipse, the Sun seems to disappear behind a dark circle surrounded by shimmering, glowing light. The entire sky becomes dark, and even the birds stop singing during a solar eclipse. A total solar eclipse lasts just a few minutes.

Long ago, people were very frightened when eclipses happened. But for centuries now, people have known that eclipses occur because of the special ways the Moon, Earth, and Sun line up.

Extend Language **Word Origins**

The word *solar* comes from the Latin word *solaris*. *Solar* means "of the sun."

Use dictionaries to find out the origin of the words *Mars* and *Saturn*, two planets in the solar system.

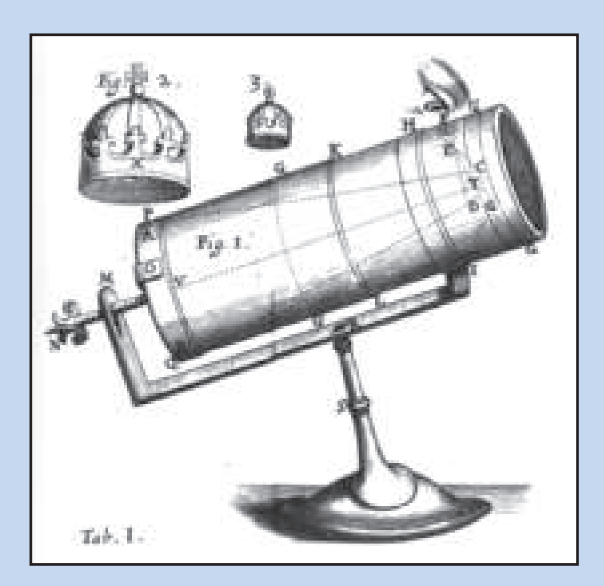






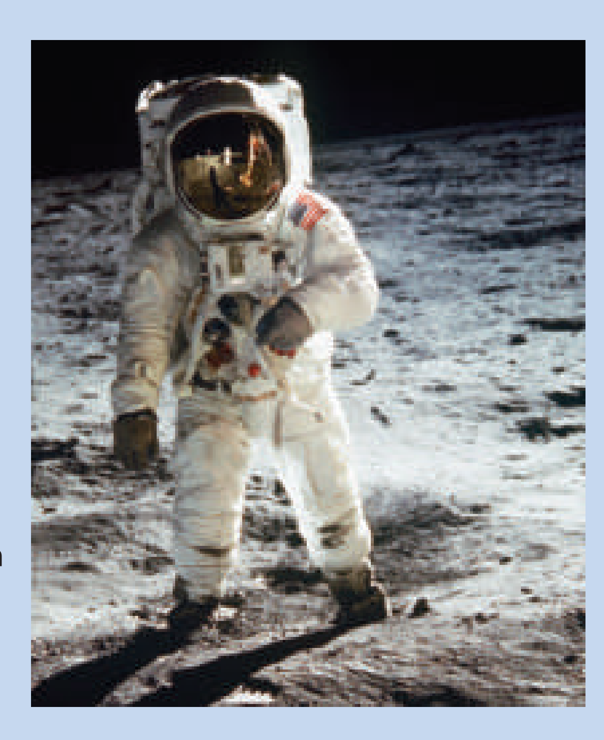
Studying the Moon: Two Great Moments

People all over the world have studied the Moon for centuries. Here are just two great moments in the study of the Moon.



In 1609, a scientist named Galileo created a telescope that could make objects look twenty times bigger. Before the telescope, people believed that the Moon was perfectly smooth. Galileo saw that the Moon's surface was rough and rocky.

On July 20, 1969, American astronaut Neil Armstrong of the Apollo 11 mission became the first man to walk on the Moon. The second man was Edwin Aldrin, shown here (Astronaut Armstrong can be seen in his face mask). After this mission, American astronauts made five more trips to the Moon to study it and bring back rocks and soil.





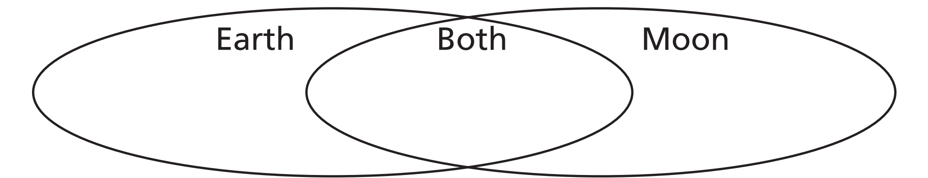


Talk About It

1. Why do you think people have always wanted to know more about the Moon?
2. What is the most interesting fact you learned about the Moon?

Write About It

3. Use a Venn diagram to write facts about the Earth and the Moon. Some facts are true about both. Make your diagram on a separate paper.



Extend Language

Adjectives have comparative forms, or forms that are used when a comparison is being made. For example, the comparative form of *bright* is *brighter*. What are the comparative forms of the following adjectives?

small full light dark

Illustrations: 3, 4 Derek Ring

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